DEVELOPING HUMAN RESOURCE FOR THE ANIMATION SECTOR: A CASE STUDY OF ANIMATION PROGRAMS IN MALAYSIAN UNIVERSITIES AND COLLEGES

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ABSTRACT: *Malaysian animation sector is observed to have high growth potential due to the rapid development of digital and electronic technology that involve directly in the digital content industry. For Malaysia to venture into this industry, it is imperative to have strong policies, educations and trainings for talents recruitment in order to be able to compete in the global market. This article looks into the state of animation education in Malaysia to assess how new talents are being recruited into the industry. For this purpose, an overview of animation education in Malaysia will be presented and the implementation of animation programs will be discussed. It began with a descriptive analysis through observation on every single of the IHL's website listed under MOHE. Then, a case study approach is used to analyze the implementations of animation programs in three chosen IHLs. As an overall, this study finds that animation education in Malaysia is still in the beginning phase and there is a need to develop the programs in order to be able to compete in the global market.*

Keywords: *Animation Education, Animation Curriculum, Malaysian Animation Sector, Human Resource Development, Institutions of Higher Learning*

INTRODUCTION

Animation sector has recently observed to have high growth potential due to the rapid development of digital and electronic technology. In some developed countries such as United Kingdom, Australia, United States and Japan, animation has become increasingly important in the creative and economic sectors. As reported in *Utusan Malaysia* (6 October 2009) the global market of digital content industry namely animation, video games development, multimedia programming and creative content today are expected to be more than USD 1.5 trillion. For Malaysia to venture into this industry, it is imperative to have strong policies and infrastructure in order to be able to compete in the global market. This article looks into the state of animation education in Malaysia to assess how new talents are being recruited into the industry. For this purpose, an overview of animation education in Malaysia will be presented and the implementation of animation programs will be discussed.

HUMAN RESOURCE AND THE DEVELOPMENT OF ANIMATION SECTOR

George & Singh, (2000: 17) sees human resource as one of the primer aspects in the organisation management because of its "direct contribution to the need of organisation." They argued that human plays a vital role in the organisation development, as they are the ones who are responsible in the administration, management and in the production of the products itself. Hashim Fauzy Yaacob (2000: 3) agrees with George & Singh and states "in organisation, human resource is essential because organisation is built by human using other resources to reach organisational goals." Based on the statements above, it is apparent that human is an important resource as they control other resources. In animation sector, knowledgeable and fully skilled human resources are essential. According to Hassan Abdul Muthalib (2007: 290), "...quality production could only be realized with the involvement of qualified animators." To increase qualified animators, education and training in related fields are essential as they play an important role in the development of human resource and because of its considerable main human resource supply to the industry. Md Sidin & Amira (2007) see that there is the need to develop skills and training in the digital content industry as this industry provides wide range of opportunities for content development.Animation in Malaysia began more than 30 years ago with the production of short animated film, *Hikayat Sang Kancil*, produced by Filem Negara Malaysia during the late 70's and early 80's. However it only started commercially in 1995, when *Usop Santorian* (first animation series) was aired on national television and afterwards, numerous animation series, featured film and tele-movies was produced (Hassan Abdul Muthalib, 2007). As a result, it also brings to the existence of animation programs in the Institutions of Higher Learning (IHL) to supply human resource for the industry. The IHL is seen as the early stage before one develops the (one's own) career. Thus, educational institutions such as universities and colleges are considered as the main human resource supply as they produce graduates into the industry. If we look at the economic potentials of this sector, in 2010, the expectation of market value for creative export of animation sector to grown up is up to RM280 billion as the main export countries are from Japan, North America and China (Badlisham Ghazali, 12 March 2009). With the increasing of animation companies and opportunities given by the government, Malaysia is planning to become one of the better players in the digital content industry. As reported by *Bernama* (8 Disember 2009), there are around 200 companies listed under Content Multimedia Creative Industry MSC Malaysia in the year 2009 with most of them involved in animation fields. This shows that there is a need to develop the sector.

HIGHER EDUCATION IN MALAYSIA

The institutes of higher learning (IHL) in Malaysia is controlled by the Ministry of Higher Education (MOHE) and are divided into four categories – public institutions, private institutions, Polytechnics and Community Colleges. The 2011 figures show that there are 20 IPTA, 452 IPTS, 27 Polytechnics and 72 Community Colleges (including branches) listed under MOHE (http://www.mohe.gov.my/portal/).

METHODOLOGY

This research intended to provide an overview of animation education in Malaysia and the implementation of animation programs in the institutes of higher learning (IHL). It began with a descriptive analysis on animation programs offered by the IHL through observation on every single of the IHL's website listed under MOHE. To identify the programs, only specific animation programs are chosen and this research is only focused on programs below Bachelors level. The variables for this analysis are name of IHL, name of Faculty, name of the programs and type of IHL. These findings will give an overview of animation education in Malaysia in terms of the number of programs and IHL that offered specific animation programs in Malaysia. For the implementations of the programs, three IHLs are selected as a case study that represents Public Institutions, Private Institutions and Community Colleges. This analysis is using case study approach as suggested by Yin (1994) and Wimmer & Dominick (2006). According to them, case study approach can also be seen as a strategy to collect data using multiple sources that explains phenomena. So, in order to gather the data, three sources are used – interview with the head of programs/lecturers, descriptive content analysis in the IHL's website and secondary sources analysis. In this article, the identity of IHLs will not be disclosed and they are presented using coding as below:

Table 1
Coding for IHL

IHL	Code
Public Institutions	IHL (1)
Private Institutions	IHL (2)
Community Colleges	IHL (3)

ANIMATION PROGRAMS IN MALAYSIA

Overall, the research findings show that there are only 23 animation programs offered in Malaysia with 23 IHLs. Among the 23 IHLs that offered animation programs, 15 institutions are from private institutions, followed by Community College with six institutions and public institutions with two universities. For Polytechnic, no animation programs are identified. Looking at the level of programs offered, the numbers of Diploma level is higher than Bachelors and Certificate level, with 12 programs. For Bachelors, there are only ninth programs and for Certificate, two programs.

Table 2:
Bachelor's Programs for Animation in Malaysia

No	Bachelors	IHL	Type of IHL
1	Bachelor in Creative Technology (Animation & Screen Technology) Hons	Faculty of Artistic and Creative Technology, Universiti Teknologi Mara (UITM)	Public
2	Bachelor of Applied & Creative Arts (Design Technology) Hons – Animation	Department of Design Technology, Faculty of Applied & Creative Arts, Universiti Malaysia Sarawak (UNIMAS)	Public
3	Bachelor of Multimedia (Hons) Film and Animation	Faculty of Creative Multimedia, Multimedia Universiti (MMU)	Private
4	Bachelor of Arts (Hons) in Animation	Faculty of Multimedia Creativity, University of Lim Kok Wing	Private
5	Bachelor of Science (Hons) in Computer Gaming & Animation Technology	Lim Kok Wing Executive Leadership College	Private
6	Bachelor Of Multimedia Technology (Hons) in Computer Animation Design	Malaysian Institute of Information Technology (MIIT), University Kuala Lumpur (UniKL)	Private
7	Bachelor in Game Design and Animation (Hons)	Faculty of Information Science & Engineering (FISE), Management & Science Universiti (MSU)	Private
8	B.C.A (Hons.) - 3D Animation Design	School of Design (Kuala Lumpur Campus), UCSI Universiti	Private
9	Bachelor of Arts (Hons) Graphic Design with Animation	Kolej Linton (Lagenda Education Group)	Private

Table 3
Diploma's Program for Animation in Malaysia

No	Diploma	IHLs	Type of IHL
1	Diploma in Animation & Multimedia Design	Faculty of Multimedia Creativity Universiti Lim Kok Wing	Private
2	Diploma in Animation	Malaysian Institute of Information Technology (MIIT), Universiti Kuala Lumpur (UniKL)	Private
3	Diploma in Games Design and Animation	Faculty of Information Science & Engineering (FISE), Management & Science Universiti (MSU)	Private
4	Diploma in Animation	Dasein Academy of Art	Private
5	Diploma in Video Animation	School of Creative Design & Technology, Segi College	Private
6	Diploma in Animation & Visual Effects (DAVE)	Academy of Digital Animation and Media (ADAM)	Private
7	Diploma in Digital 3D	Equator Academy of Art	

8	Diploma Multimedia Artist – Animation	Kolej Teknologi MEA	Private
9	Diploma In Animation Technology	School of Media and Arts, Kolej Yayasan Melaka (international)	Private
10	Diploma in Interactive Multimedia & Animation	PJ College of Art and Design	Private
11	Design		
12	Diploma in Digital Animation	The One Academy College	Private
	Diploma in Animation (Collaboration with UniKL)	Kolej Yayasan Sabah	Private

Table 4

Certificate's Programs for Animation in Malaysia

No.	Certificate	IHLs	Type of IHL
1	Certificate in 2D Animation	Community College Selayang Community College Kuantan Community College Segamat Community College Kepala Batas Community College Kuala Langat Community College Teluk Intan	Community Colleges
2	Certificate in 3D Animation	Community College Selayang Community College Kuantan Community College Segamat Community College Kepala Batas Community College Kuala Langat Community College Teluk Intan	

Implementation of Animation Programs: A Case Study of Three IHLs

As mentioned before, three IHLs are selected as a case study and the analysis will be focusing on two main elements namely program structure and quality of the program. Curriculum structure will include objective of the programs, courses in the programs and also the teaching and learning process. For the second element, quality of the programs, the analysis will include qualification of the educators, technology infrastructure, quality assurance of the program and relationship with the industry. Earlier findings show that IHL (1) only offered animation programs for Bachelors level; and IHL (2) offered both Bachelors and Diploma level. IHL (3) only offered Certificate level, as they are more focusing on vocational aspect.

Programme Structure

In this section, the discussion will include findings on the objective of the programs, courses in the programs and the process of teaching and learning between these three IHLs.

Objective of the Programs

Based on the research findings, the objectives of the Bachelors program of IHL (1) stressed more on storytelling and aiming to give wide exposure in the production of animation as a whole. Bachelors program in IHL (2) is slightly difference as compared to IHL (1). They give more attention on the development of technical aspect, management skills and innovative students. *For Diploma programs offered in IHL (2), the objective of the programs is more on application of knowledge and practical elements in production of animation. As for IHL (3), the Certificate level programs are more on vocational aspect that stressed on specific skills for working.*

Table 5

Objective of the Animation Programs in Three IHLs

IHL	Objective of the Programs
IHL (1)	This three-year programme exposes students to the craft of creating animation scripts and characters. Students will learn to transfer the words into storyboards – the blueprint for any animation production. Our literature course exposes students to the aesthetics of storytelling; the animation history class delves into how the animators of old solved problems by using their minds; the drawing class enhances their understanding of posing – an integral part of acting in animation. With the latest user-friendly software and state-of-the-art facilities, students are expected to master the techniques of 2-D, 3-D and stop-motion animation.
IHL (2)	Diploma This program will equip students with both theoretical and fundamentals of drawing and computer technology used in animation. It will develop student's skills in storyboarding, scripting, timing and producing layout design. Since Digital Animation is widely applied in production of films, videos, advertising, architectural visualization and special effects and in the creation of educational material, graduates of this programme would have a wide range of career options in the related industries. Bachelors This programme will focus on the development of the technical aspect, management skills and innovative students. It will demonstrate the ability to produce creativity students in field of animation. During this course, students will learn the understanding of artistic values, technical and management skills needs for animation field and to prepare students to become an entrepreneur in animation field.
IHL (3)	The courses will equip students with knowledge and skills related to basic techniques of figure drawing, the use of a variety of 2D and 3D computer software, digital imaging

techniques using special effects in software and computer application for 2D and 3D animation to create animated films. In addition, students will be introduced to the skills to design 2D and 3D animation in www, the structure of the films to create animated presentations and publications audio-visual using computer application.

Courses in the Programs

From the findings of the research, courses in both Bachelors programs in IHL (1) and IHL (2) contain combination of fundamental and technique elements that include more on storytelling aspects. Thus, courses such as script writing and animation storytelling are seen in both bachelors programs. For Diploma programs, elements of fundamental and technique are still applied, but the differences between Bachelors programs are on storytelling. Courses such as script writing and animation storytelling are not offered in the programs as this level focuses are more on the technique itself. For IHL (3) the courses offered are following the process in the industry. As they are using modular system, the courses focus more on applied and practical that enables students to practice for real working situations.

Table 6

IHL (1) Bachelor's Courses

Semester	Courses
1	Visual Culture
	History of Animation and Technology
	Animation Drawing I
	Fundamental of Film Production
2	Writing and Storytelling for Animation
	Animation concepts & ideas
	Acting For Animation
	Animation Drawing II
	2D Animation Workshop
3	Dimension Design For Animation
	Sound Effect and Foley
	Digital Animation Technology
	Seminar and Workshop For 2D Animation
4	Photo Arts
	Theory and Film Appreciation
	Cinematography I
	3D Computer animation: intermediate
	Digital Visual Effect
5	Experimental Animation
6	Animation Production
	Project/Paper Project
	Digital and New Media Theory
	3D Computer animation: Advanced
	Digital Visual composition
	Music Video Production

Table 7
IHL (2) Diploma Courses

Semester	Courses
1	History of Animation
	Principles of Timing I
	Drawing I
	Story Structure
	Character Design I
2	Principles of Timing II
	Drawing II
	Computer Animation I
	Character Design II
	Layout Design
3	Visual Communication
	Storyboard Design
	Computer Animation II
	Colour and Media
4	3D Design
	Post Production
	Animation Project Development
	Web Design
5	Portfolio Production
	Final Year Project
6	Industrial Training

Table 8
IHL (2) Bachelor's Courses

Semester	Courses
1	Principles of 2D animation
	Introduction to Drawing
	Fundamentals of Animation Design
	Introduction to Computer Graphic
	Principles of Computer Programming
2	2D Animation Design
	Script Writing
	Introduction to Layout and Perspective Basic
3	3D Modeling
	Character Development and Design
	Digital Audion Design
	Storyboard Design
4	Photography
	Animation Programming
	Advanced Figure Design
	Digital Video Production
	Multimedia Authoring
5	Prop and Model Making
	3D Animation Design
	Film Principles and Communication

6	Advanced Illustration
7	Industrial Training Digital Visual effects Cyber Law Final Project 1 Major Elective Subject – (Animation for Visual Narrative, Animation for Web Design, Advanced Image Editing, Advanced Post Production) 1 Minor Elective Subject – (Web-Based Authoring, Game Design, Virtual Reality, Web Application Development)
8	Animation Design Project Management BCAD Exhibition Final Year Project (1 year course) 1 Major Elective Subject – (Animation for Visual Narrative, Animation for Web Design, Advanced Image Editing, Advanced Post Production) 1 Minor Elective Subject – (Web-Based Authoring, Game Design, Virtual Reality, Web Application Development)

Table 9

IHL (3) National Modular Certificate (SMK) Courses For 3D Animation

No.	Program	Period
1.	Digital Visual Arts	4 months
2.	Animation Preproduction	4 months
3.	Character Design For 3D Animation	4 months
4.	Props Design and Background for 3D Animation	4 months
5.	3D Animation Production	4 months
6.	3D Animation Postproduction	4 months

Table 10

IHL (3) National Modular Certificate (SMK) Courses For 2D Animation

No.	Program	Period
1.	Digital Visual Arts	4 months
2.	Animation Preproduction	4 months
3.	Props Design and Background for 2D Animation	4 months
4.	2D Animation Production	4 months
5.	2D Animation Postproduction	4 months

Teaching and Learning Process

Based on the interview findings, IHL (1) implements 50% theoretical and 50% practical in their teaching and learning process with focus placed more on skills and creative elements. However, no courses have writing examination except for one subject, which is History of Animation and Technology. The students are also required for industrial training of six-month duration to gain experience in the real working environment and are compulsory to either produce one animation project or a thesis in their final year as the requirement to graduate from the program. For IHL (2), the process of teaching and learning are 40% theoretical and 60% practical.

Based on the interview findings, their programs are focusing more on practical and hands-on aspects. This research also found that the courses in Bachelors and Diploma programs have no writing examination to which it has been replaced by final project in every course. Other than that, the students are also required to undergo industrial training of six-month duration. For Bachelors program, there is a touch of research elements being implemented that required students to write a thesis although their focus as a whole, is more on practical aspect. The findings also show that both Bachelors and Diploma students are required to produce one final animation project in the final year to which the project will be evaluated by the lecturers as well as the industry. For IHL (3), the teaching and learning process in the Certificate programs are 100% practical whereas theories are implemented within the practice with 70% evaluation on every course and 30% evaluation on the whole module. IHL (3) is using Modular System based on Action Oriented Learning and all the trainings follow specifically the production process in the industry. Interaction between lecturers and students is the main elements in their learning process.

Quality of the Programs

In this section, the discussion will include findings on the qualification of the educators, technology infrastructure, quality assurance of the program and the relationship of IHLs with the industry.

Qualification of Educators

Based on the research findings, the number of lecturers in IHL (2) is much higher than IHL (3) and IHL (1). IHL (2) has 19 lecturers and more than half of them came from Interactive Multimedia, Multimedia Design and Digital Animation background. For IHL (3), there are seven lecturers and all of them are from Animation, Multimedia and Graphic background. For IHL (1), there are only six permanent lecturers with Animation and Digital Media background.

Table 11

Background of Educators in Three IHLs

IHL	Fields Area	Total of Educators
IHL (1)	Animation	3
	Digital Media	3
IHL (2)	Interactive Multimedia	4
	Multimedia Design	4
	Digital Animation	3
	Interactive Multimedia Design	1
	Web Design	1
	Multimedia	1
	Graphic Design	1
	Interactive Media	1
	Visual Communication/Illustration	1
	Digital Ilustration	1

Technology Infrastructure

Based on the findings, IHL (1) has two drawing studios: an experimental studio and a classical animation studio. For computer labs, IHL (1) has one lab for 2D animation and one for 3D animation. 2D animation lab is using ToonBoom software and for 3D animation, 3D Max is used. The total of computers in each lab is 30 units. For IHL (2), interview findings show that six computer labs with 240 computers are provided. Four of them are for Diploma program and the other two are for Bachelors program. From these six computer labs, two of them are using Mac stations and the rest are Microsoft. All of the computers are equipped with animation software such as Adobe Flash CS4 and ToonBoom for 2D animation; Maya, 3D Max and LightWave for 3D animation; and other designing software like Adobe Photoshop, Illustrator and In Design. For IHL (3), the findings show that the institution has two computer labs with either Mac or Microsoft in each lab. Other than that, they also have one audio-visual studio and one drawing studio. All the facilities are equipped with software such as Adobe Photoshop, Illustrator, Flash, Premiere, ToonBoom Studio, 3D Max and Sound Forge.

Quality Assurance of the Program

Based on the interviews findings, all animation programs in the three IHLs have already gotten the qualification from MQA, but some of them are in the process of renewing their qualification.

Relationship with the Industry

Based on the findings, it shows that all three IHLs are connected and have collaboration with the industry. For IHL (1), even though there are no formal activities that involve the industry, the initiative is noticed with the engagement of their lecturers in the industry's activities, such as programs organised by Animation Society of Malaysia (ANIMAS) and Multimedia Development Corporation (MDEC). IHL (1) also invites part time lecturers from the industry to teach in their programs. For IHL (2), the research finds that they do have collaboration with the industry. One of the collaborations is the involvement of experts in the industry in the evaluation of the student's final year projects. This actually helps the IHL and students to get responses from the industry, especially concerning the implementations of courses. Thus, it is also an opportunity for the students to show their abilities and make contacts with the industry. For IHL (3), the relationship with the industry is observed with the involvement of the industry in their curriculum review. Other than that, IHL (3) also invites experts from the industry as part time lecturers to teach in their programs.

DISCUSSIONS AND CONCLUSION

Education plays an important role, as it is one of the aspects needed to be taken into consideration in the early stage before one develops the career. Where animation sector in Malaysia is still in the beginning phase, the concern in animation

education is much higher for the sector to grow further. Therefore, the implementation of education programmes that are able to meet the need of the industry is essential. As mentioned earlier, the purpose of this research is to provide an overview of animation education in Malaysia and the implementation of animation programs in IHLs. Based on the findings, the number of universities and animation programs offered in public institutions is still limited compared to other media and communication programs. Private Institutions are seen as the main human resource supply for animation sector as large numbers of animation programs are offered there. As for Community Colleges, they still play their role as a place for vocational training that supply specific-skilled human resource for the sector. Looking at the implementation of animation programs in IHLs, the research findings show that all three IHLs are trying to develop human resource for Malaysian animation sector. The steps taken by the IHLs to do collaboration with the industry is one of the examples on the initiatives taken, as the linkage with the industry is important in order to obtain updates concerning the technology changing. As for the qualification of the educators, based on the case study, the numbers of them who are from animation background is still limited with many of them came from the fields of Multimedia, Graphic and Digital Media. Hence, these findings suggested the need to develop and increase educators in animation fields. As for technology infrastructure, research findings show that all three IHLs are equipped with adequate tools for the learning of animation production. As an overall, this study finds that animation education in Malaysia is still in the beginning phase and there is a need to develop this program as the sector is growing and has a huge potential in economic growth.

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